A PRELIMINARY ANALYSIS OF THE VISIT RATES OF PATIENTS IN A MILITARY FAMILY PRACTICE HEALTH CARE PROGRAM

Frank Marchman Perry

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THESIS

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by

Frank Marchman Perry

September 1975

Thesis Advisor:

R. W. Butterworth

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A Preliminary Analysis of the Visit Rates of Patients in a Military Family Practice Health Care Program

by

Frank Marchman Perry
Captain, United States Army
B.S., United States Military Academy, 1967

Submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN OPERATIONS RESEARCH

from the

NAVAL POSTGRADUATE SCHOOL

September 1975

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ABSTRACT

This thesis provides a preliminary analysis of the visit rates of patients in a military family practice mode of health care. The history and basic operations of a family practice clinic at Fort Ord, California are briefly discussed. The process and problems of the sample selection and data collection are explained in detail. The analysis procedures are described fully. Comparisons of clinic utilization are accomplished and confidence intervals for the average visit rates are calculated. Visit rates to clinic groups (family practice, primary, and specialty) are discussed. Family practice referral patterns are analyzed. The sample is subdivided into Age/Sex groups and into Grade/Military Status groups. Conclusions and recommendations for future work are offered in the final section.



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I. INTRODUCTION

In the days of the general draft, the military services were able to induct qualified medical personnel as needed to support the Military Health Care programs. As the draft ended, however, the military was force to compete for the available medical personnel resources and to reevaluate its medical programs. These events accelerated the services' examination of different methods of health care delivery that would provide at least the same quality of care as previously available while constrained by the available resources.

Two such tried programs are in progress at Fort Ord, California. In the Acute Minor Illness Clinic (AMIC), paramedics perform the initial categorization of patients' illnesses and treat minor cases. This is a modified version of the General Medical Clinic type health care which most military patients are used to. The Family Practice Clinic (FPC) attempts to establish a continuing doctor-patient relationship by providing for selected families, a physician who handles all routine care. This thesis is a preliminary analysis of the Family Practice mode of care.

In Part II of the thesis the motivation for and the objectives of the thesis are discussed. The establishment and operation of the North Fort Ord Family Practice Clinic of the Silas B. Hayes Army Hospital is also briefly discussed.



Part III outlines how the sample of patients to be used for the analysis was selected and how the actual data on these patients was collected and organized. The analysis of the data and results are then discussed. Conclusions and recommendations for future work in this area are offered in Part IV.



II. BACKGROUND

A. NORTH FORT ORD FAMILY PRACTICE CLINIC

1. History

In 1971 a seminar was held on ambulatory health services and led to the recommendation that "Family Practice Clinics be established to provide primary and comprehensive care at appropriate military installations." [1]. The clinics were to be staffed by Family Practice staff physicians and residents.

These family practitioners are trained in pediatrics, obstetrics-gynecology, internal medicine, surgery, and other specialties

[2]. The key to the success of Family Practice is the continuity of care--the family member sees the same doctor for all problems (in theory, from birth to death). When necessary to do so, the doctor admits his patients to the hospital, prescribes their care while they are confined, and refers them to specialists when appropriate.

The Family Practice residency at Silas B. Hayes Army Hospital (SBHAH) opened on 1 January 1973, with four residents. Meanwhile, portions of the old hospital near the Patton Park housing area were being renovated and remodeled for what would become the North Fort Ord Family Practice Clinic (NFPC). After the buildings were readied, appropriate staffing was obtained and the first patient was seen on 31 July. By September 1973 this "community based" clinic was in full operation.



2. Clinic Operations

The North Family Practice Clinic differs from the Family Practice Clinic at the Hospital in that it is staffed by physicians already trained in Family Practice. Each doctor at the clinic serves as the primary physician for a select panel of families. Families are scheduled to see their own physician if at all possible. However, the other doctors in the clinic do fill in when necessary. When a physician is transferred, his replacement generally assumes patient care responsibility for his panel. New families are added to the clinic as other families leave or additional doctors arrive. The clinic has its own pharmacy, laboratory, and X-ray facility in order that the majority of the patients' problems and needs can be handled in the clinic area. This is very important since the clinic is some distance from the hospital and the hospital support facilities.

The North Family Practice Clinic is one of seven so-called primary clinics at Fort Ord. The others are: the Hospital Family Practice Clinic, the Acute Minor Illness Clinic (AMIC), the Internal Medicine Clinic (IM), the Emergency Room (ER), the Obstetrics-Gynecology Clinic (OB-GYN), and the Pediatrics Clinic (PED). The General Medicine Clinic (GMC) was replaced by the Acute Minor Illness Clinic during the time period of this study; therefore, data from the two will be grouped together. The AMIC/GMC and FP Clinics are the clinics to which most patients are expected to initially take their medical problems. However, patients can go to any of the Primary



Clinics for an initial visit if they feel it necessary or appropriate. Because family practitioners are trained in all the primary areas of care, it was anticipated that the Family Practice Clinics would be able to provide a high percentage of the total health care required by its patients.

B. OBJECTIVES OF THIS THESIS

1. Motivation

The military services are all interested in the outcome of the various pilot medical programs being tried at different military bases. At Fort Ord, California, the Health Care Studies Unit has been directed to do the data collection and analysis involved in comparing certain aspects of the different mode of health care delivery (AMIC and FPC) being practiced at the Silas B. Hayes Army Hospital. The general operations of the AMIC and FPC modes are different in the following way. The doctors and paramedics in the AMIC see a great many patients daily and do not attempt to establish a continuing doctor-patient relationship. On the other hand, the FPC doctors have their own patients and are expected to handle the majority of their patients' problems. It was felt by the author that if certain assumptions were made about the data that was available for study, it would be possible to get a reasonable picture of how, how much, and by whom the medical care is being provided to the patients utilizing the two different health care modes. author did not attempt to determine the quality of care being provided. Discussions of the various aspects of the two modes of care with members of the Health Care Studies Unit and Family



Practice Clinic doctors led to the following objectives and assumptions.

2. Objectives and Assumptions

The first objective of this study was to compare the visit rates of a sample of patients of a Family Practice Clinic to determine if there was any real change in the clinic utilization patterns when the patients went from the AMIC/GMC mode to the Family Practice Clinic mode. It was assumed that the number of visits patients made to the SBHAH would be a good proxy variable for the amount of Health Care required by the patients, and required of the available medical resources.

The second objective was to produce a pattern of medical clinic utilization from the first analysis that could be used by hospital administrators in allocating their resources when making clinic changes such as the establishment of a Family Practice Clinic. It was assumed for this objective that, first, the general composition of the sample producing the pattern could be determined, and that the composition of the patient population in the area in which the pattern was to be applied could also be determined. Secondly, it was assumed that hospital administrators could determine from clinic work reports and other available documentation what resources (lab work, X-rays, medicines, etc.) were required for an "average" visit to a particular clinic.

The third objective was to analyze the distribution of care in the "before" and "after" periods. As was discussed in the section on the Family Practice Clinic, there are two



types of clinics, primary and specialty. Again using the visit frequency as a proxy variable for the amount of care provided, the distribution of care between the Family Practice, primary, and specialty clinics was determined. In accomplishing this objective, the data on the referrals of patients from one clinic to another was also analyzed.

In the final portion of the study the sample was grouped by age and sex, and by rank and duty status. This portion was primarily for more information on the sample since the sex and age group stratification of the visit rate data was accomplished for large groups.



III. DATA ANALYSIS

A. SAMPLE SELECTION AND DATA COLLECTION

1. General

Since this thesis is a preliminary effort, it was decided to use as large a sample of patients as was practical or available to give statistical confidence to the results. The large sample would also allow the use of the normality assumption when doing certain statistical tests and calculations. From the objectives it was obvious that, if possible, the patients in the sample should be representative of the population at Fort Ord. It was also desirous to keep the data collected on each patient in the sample simple and applicable to the study, but at the same time of sufficient detail for more expanded future studies.

2. Patient Sample Selection

The original plan devised by the Health Care Studies
Unit for their own analysis called for the structuring of two
well-balanced, identical samples of patients. The first group
would be composed of a mix of the patients from the Family
Practice Clinic while the second group (control group) would
be matched demographically in every way possible except that
they would not be members of the Family Practice Clinic. This
plan was determined to be infeasible because of the impossibility of getting two well-balanced, identical groups without
moving persons from one health care mode to another when such



movements were not an available option. Finally it was decided that each individual in the sample would be his own control, i.e., the sample would be limited to individuals who had been under both modes of health care at Fort Ord. A quick screening of the records available showed that in order to get a large sample the criteria for selection would be the following:

- a. The individual had been under a medical care mode other than Family Practice at Fort Ord for at least a year prior to his date of acceptance to the Family Practice Clinic (the "before" period) and
- had been a member of the Family Practice Clinic for at least a year since his date of acceptance (the "after" There was no requirement for the individuals in the period). sample to have utilized any of the clinics available during the two-year period (thus individuals with no medical problems were included in the sample). The date an individual was accepted to the Family Practice Clinic was the base date for all data collected. The time from acceptance date until the date of the individual's first visit to the Family Practice Clinic was termed the transition period. Data related to the transition period is being used by the Health Care Studies Unit in some of its research. For this thesis the transition period and the individual's actions during that period were treated simply as part of the overall Family Practice picture. action carries with it the implicit assumption that all individuals accepted to family practice membership knew of that acceptance and either had no need for a first visit, or chose



for whatever reason not to utilize the Family Practice

This criteria produced a sample of over 950 patients for whom medical records were available. As military families spend more time in the same locale through stabilized tours of duty and as the period of existence of the Family Practice Clinic increases, it may be possible to structure a sample with a three- or four-year time base.

3. Data Collection

Having determined who was to be in the sample, it was now a matter of determining what data would be necessary to obtain the previously stated objectives. The first thing of interest was general data about the sample itself. At the onset of the Family Practice Clinic's operations, the Health Care Study Unit had started collecting what was called Baseline information on all families who applied for membership to the Clinic. This was a very comprehensive effort and included demographic information on the sponsor, and the sponsor's spouse and family. This was accomplished through the use of a detailed questionnaire (Appendix C). It was determined that this data would be sufficient for determining the age/sex composition of the sample.

Upon enrollment into the Clinic, each individual was assigned a patient identification number (ID) that consisted of the sponsor's social security number and a two-digit prefix that identified each member of the sponsor's family. The ID then uniquely identifies each member of the Family Practice Clinic.



The prefixes are:

20	Sponsor	40	Sponsor's mother
30	Spouse	45	Sponsor's father
50	Mother-in-law	55	Father-in-law
01	First child	02	Second child
03	Third child	60	Other

Some of the Baseline data was collected by the Health Care
Studies Unit and coded and punched into computer cards for
use in creating a master file. The following is a list of
items which were used in this thesis and by the Health Care
Studies Unit.

ITEM	CARD COLUMNS (inclusive)
SOCIAL SECURITY NUMBER	1-9
GRADE	10-11
MILITARY DUTY STATUS	12
MARITAL STATUS	13
FAMILY MEMBERS IN AREA	14-15
NUMBER OF CHILDREN	16-17
SPONSOR'S	*
SEX	18
YEAR OF BIRTH	19-20
RACE	21-22
RELIGION	23 - 24
EDUCATION	25-26
SPOUSE	
SEX	27
YEAR OF BIRTH	28-29



RACE	30-31
RELIGION	32-33
EDUCATION	34-35
CHILDREN	
1st	
SEX	36
YEAR OF BIRTH	37-38
ETC. FOR UP TO 8 CHILDREN	39-59
OTHER DEPENDENT	60
SEX	60
CODE NUMBER	61-62
YEAR OF BIRTH	63 - 64

The coding sheet is at Appendix C.

The next problem was that of collecting data on visit rate and referral rate. The Health Care Studies Unit had devised encounter forms for the Family Practice Clinics for the purpose of collecting data on each patient seen by each health care provider (doctor, nurse, paramedic, etc.). The encounter data collection is a continuing real time data collection effort [3], and will probably be extremely useful in detailed studies of the clinics that are participating. However, for this effort, the encounter data was not appropriate since it was not being collected by all of the clinics and was generally not available for the earlier portion of the desired time periods.

Therefore, it was decided to use a complete two-year period chart review of the medical records of all the patients



in the sample. The review was conducted by Army enlisted personnel of the Health Care Studies Unit. The acceptance date (month and year) for each individual in the sample was used as a reference point in his records from which to review the activities the year prior to and year after the acceptance date as previously discussed. The review of the charts produced a count of the number of visits to the different clinics during the appropriate period. The information on referrals from one clinic to another was also recorded, coded (Appendix C), and finally punched onto cards to create the data base for the study. An example may help explain the procedure.

Assume that Capt. A.B. Jones is in our sample. During the year prior to his acceptance to the Family Practice Clinic his medical records reflect that he went to the AMIC for a sore back and was referred from there to the Orthopedic Clinic. He went to the Orthopedic Clinic two times (two different dated entries in his records) and was referred from there to the Physical Therapy Clinic where he went five times. If this was the total of the entries in Capt. Jones' records for the year "before," the visit/referral part of his chart review would show

Fm	То	#Visits
99	3	1
3	18	2
18	20	5

The clinics were abbreviated and coded as follows for ease in data manipulation:



CODE	AB		CLINIC	CODE	<u>AB</u>		CLINIC
1	FPH	=	FP-HOSPITAL	14	NM	=	NUCLEAR MED
2	FPN	=	FP-NORTH	15	ОТ	=	OCCUP THERAPY
3	AMIC	=	AMIC/GMC	16	ОРНТ	=	OPHTAMOLOGY
4	ER	=	EMERGENCY ROOM	17	ОРТО	=	OPTOMETRY
5	IM	=	INTERNAL MED	18	ORTH	=	ORTHOPEDICS
6	OBY	=	OB-GYN	19	PE	=	PHYSICAL EXAM
7	PED	=	PEDIATRICS	20	PT	=	PHYS THERAPY
8	ALLY	=	ALLERGY	21	PODY	=	PODIATRY
9	DENT	=	DENTAL	22	PM	=	PREV MED
10	DERM	=	DERMATOLOGY	23	PSYC	=	PSYCHIATRY
11	ENT	=	ENT	24	SURG	=	SURGERY
12	MH	=	MENT HYG/SOC WK	25	UROL	=	UROLOGY
13	NEUR	=	NEUROLOGY	26	OTHR	=	OTHER

Because the enlisted personnel who did the chart review were not medically qualified, they were not required to interpret what they read. In other words, they were not to determine why an individual was referred to a particular clinic, nor were they to determine, once he was referred, whether all subsequent visits were for the same reason. They were instructed, however, to count a referral only if the patient did in fact go to the clinic to which he had been referred.

Some of the possible errors in the data collection procedure will now be discussed. First, it would be possible that a patient could be referred from one clinic to another for a particular reason for one visit, then continue to go to that clinic for other problems that were not the subject of



the original referral. By hospital procedure, all specialty clinics (except Optometry) require that the patient be referred to them from one of the primary clinics before the patient will be seen. However, clinics do not turn sick patients away. is also possible that a patient who has been referred to a specialty clinic for one problem may also have a different problem which the clinic will go ahead and treat. Given the way data was collected, all the visits to the second clinic would be counted as referrals from the first clinic. effect would be to give a higher referral rate (visits per referral) than was actually true. This problem is being eliminated for the Family Practice patients by the family doctors' follow-through actions on the cases they refer to specialty clinics. There were also cases where visits to a clinic got counted only as initial visits to that clinic and not as referrals because there was no record in the medical chart of the referral. This would make it appear that a higher percentage of care was being provided by a clinic than was actually the case. It was assumed for this study that these situations would be rare and that the more detailed chart review required to eliminate their possibility would not be worthwhile.

With the data on the sample now collected, the processing and analysis of the data could begin.

B. PROCESSING AND ANALYZING THE DATA

1. Comparison of the Average Visit Rates Before and After
As discussed in Part II, the first objective of this
thesis was to compare the visit rates of the patients before



and after their acceptance to the Family Practice Clinic to determine if there were significant changes. To accomplish this objective, hypothesis tests concerning the mean visit rate of the patients in the two periods (Before vs. After) for each of the clinics were used. First, letting μ_{jk} = mean number of visits per year to clinic j; for period k (i.e., k = 1 is Before FP, k = 2 is After FP). The data on clinic visits formed the samples where X_{ijk} represented X number of visits by individual i (1 to N) to clinic j in period k, and $\overline{X}_{jk} = \sum\limits_{i=1}^{N} X_{ijk}^{N}$ was the mean visit rate for clinic j in period k. Since the population variances were assumed to be unknown, the sample variances were calculated by

$$S_{jk}^{2} = \sum_{i=1}^{N} (X_{ijk})^{2}/N - (\overline{X}_{jk})^{2}$$

The null hypothesis for each clinic that $\mu_{j1} \leq \mu_{j2}$ for each clinic, was tested against the alternative hypothesis that $\mu_{j1} > \mu_{j2}$, i.e., the mean number of visits to other clinics decreases after joining a Family Practice Clinic.

It must be pointed out that the Family Practice Clinics did not exist during the entire "Before" period so figures for that period for Family Practice were deleted.

To test the hypothesis, the statistic \overline{X}_{j1} - \overline{X}_{j2} was used and the null hypothesis was rejected if this difference was significantly positive. The sampling distribution of \overline{X}_{j1} - \overline{X}_{j2} has mean μ_{j1} - μ_{j2} and sample variance S_{j1}^2 & S_{j2}^2 and, since N_1 = N_2 > 900, are approximately normal: therefore the sampling distribution of the statistic



$$z_{j} = \frac{\overline{x}_{j1} - \overline{x}_{j2}}{\sqrt{(S_{j1}^{2}/N_{1}) + (S_{j2}^{2}/N_{2})}}$$

is given approximately by the cumulative normal distribution.

[4]. When the sample was subdivided into Age/Sex groups, similar tests were done for each group. The only change was to use a t-statistic for the critical value in the test for significance and in the calculation of confidence intervals about the mean visit rates. This was necessary because of the smaller number of individuals in the sample subgroups.

The table that follows shows the mean numbers of visits to each clinic averaged over the entire sample for each period. Also included are the variances and the test statistics with significance indicated at the 95% level (one tail test). Similar tables were done for different Age/Sex groups and are in Appendix A.

2. Determining Confidence Intervals

In Table I it is evident that there are significant decreases in the average number of visits to all the primary clinics, (AMIC/GMC, OB-GYN, PED, INT-MED, EMER), and to many of the specialty clinics. In order that these results might serve as predictors for use by hospital administrators, confidence intervals have been placed around the mean visit rates for each clinic by the following:

1) Entire Sample:

$$\overline{X}_{jk} \pm Z_{1/2} \alpha \sqrt{S_{jk}^2/N_k} \qquad \alpha = .05$$



TABLE I. COMPARISON OF AVERAGE VISIT RATES TO INDIVIDUAL CLINICS

SIGNIF	****	××	**	××
TEST	1000 1000 1000 1000 1000 1000 1000 100	87770	00000000000000000000000000000000000000	7987
VAR	1 00000000 00000000 000000000000000000	04000	0-1000-	00440
VISITS	00000000000000000000000000000000000000	-0000	00-2200	00000-
V A R	000001w00	-40000 CW0000	-004260 -122660	97750 97750
VISITS	00000000000000000000000000000000000000	24000	30NH033	00000
CLINIC NUMBER			7878787 7878787	



2) Age/Sex Groups:

$$\overline{X}_{jk} \pm t_{1/2} \alpha \sqrt{S_{jk}^2/N_k} \qquad \alpha = .05$$

Table II is for entire sample and is presented here. The tables for Age/Sex groups are found in Appendix A.

TABLE II. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES TO INDIVIDUAL CLINICS

CLINIC	INTERVAL	INTERVAL
NUMBER	BEFORE	AFTER
12345678901234567890123456	0.0 - 0.006 0.0 - 0.028 1.408 - 1.719 0.402 - 0.523 0.085 - 0.180 0.331 - 0.460 0.645 - 0.881 0.042 - 0.121 0.0 - 0.007 0.177 - 0.315 0.082 - 0.165 0.000 - 0.023 0.000 - 0.023 0.000 - 0.023 0.000 - 0.023 0.0054 - 0.134 0.202 - 0.270 0.115 - 0.198 0.011 - 0.029 0.033 - 0.029 0.033 - 0.086 0.0 - 0.086 0.0 - 0.088 0.0 - 0.088 0.0 - 0.088 0.0 - 0.088 0.0 - 0.088 0.0 - 0.088 0.0 - 0.015 0.059 - 0.127 0.053 - 0.131 0.048 + 0.127	0.8888 - 1.172 3.213 - 3.672 0.175 - 0.257 0.221 - 0.300 0.037 - 0.084 0.134 - 0.219 0.066 - 0.135 0.018 - 0.055 0.108 - 0.035 0.046 - 0.03 0.003 - 0.014 0.002 - 0.013 0.0 - 0.03 0.038 - 0.035 0.162 - 0.232 0.059 - 0.129 0.006 - 0.025 0.016 - 0.0453 0.016 - 0.0453 0.010 - 0.008 0.039 - 0.091 0.026 - 0.068 0.020 - 0.055



3. Grouping Clinics

In order to better compare the visit rates for Family Practice Clinic operation in the "After" period with the Primary Clinics' operation in the "Before" period, it was decided to restructure the data into special groups: Family Practice, Primary Care, and Specialty Care. The Primary Care group includes AMIC/GMC, OB-GYN, INT-MED, PED, and EMER. All other clinics are grouped together as the Specialty clinics. As previously discussed, the Family Practice doctors are trained in all primary care modes and therefore a patient in the Family Practice program should not utilize the primary care clinics as frequently as before joining the program. The number of visits for each sample member was categorized into three groups and for these consolidated groupings statistics were calculated in a manner similar to the previous calculations to include the confidence interval. The results of these calculations are shown in the following table.

TABLE III. COMPARISON OF AVERAGE VISIT RATES TO GROUPED CLINICS

CLINIC GROUP	VISITS BEFORE	VAR	VISITS AFTER	VAR	TEST STAT	SIGNIF
FAMILY	0.014	0.074	4.474	18.550	0.0	
PRIMARY	3.318	12.788	0.813	2.283	19.980	X
SPECIALTY	1.346	5.628	0.877	3.418	4.832	X
TOTALS	4.678		6.165			

These average visit rates were also given a 95% confidence interval and are recorded below. Tables for Age/Sex groups are in Appendix A.



TABLE IV. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES TO GROUPED CLINICS

CLINIC GROUP		ERV FOR			TER FTE	VAL R
FAMILY	0.0	-	0.031	4.202	-	4.747
PRIMARY	3.092	-	3.544	0.718	-	0.909
SPECIALTY	1.196	-	1.496	0.760	-	0.994

The average number of visits to all clinics was summed up and require some explanation. The average for the "Before" period was 4.678 visits per year and the average "After" was A discussion of this increase with members of the Health Care Studies Unit and the head of the Family Practice Clinic revealed that initial "come meet your doctor" type visits were not uncommon for families when they were accepted to the clinic. This initial visit also often led to the making of routine appointments for physical check-ups for all members of the family. The Family Practice program also incorporates preventive medicine which accounts for still another increase The data that was available at the time of the in visits. study did not make it possible to predict whether this increase in the average number of visits will continue as the Family Practice Clinic becomes more established. Also, the feeling of one of the doctors working with the Health Care Studies Unit was that many patients who had previously gone to civilian sources were now coming into North Family Practice Clinic. This was based on his preliminary analysis of data collected on hospitalization in the two periods of Family Practice patients.



4. Care Provided by Family Practice Clinic

The results for objective three are very interesting. Using the average visit rates from Table III, the percentage of total visits to each group were calculated and are listed in Table V.

TABLE V. PERCENTAGE OF AVERAGE VISITS TO FAMILY PRACTICE, PRIMARY AND SPECIALTY CLINICS

CLINIC	BEI	FORE	AFTER		
GROUP	VISITS	PERCENT	VISITS	PERCENT	
FAMILY	.014	.30	4.474	72.58	
PRIMARY	3.318	70.93	0.813	13.19	
SPECIALTY	1.346	28.77	0.877	14.23	
TOTALS	4.678	100.00	6.165	100.00	

It will be noted that the family practice group is handling a slightly greater percentage of the total average number of visits in the "After" period than the primary group handled in the "Before" period. As discussed in section II, this is the result that should be expected for patients who change to Family Practice. The next step in the analysis was to look at the referral pattern of the different clinics.

There are charts showing the referral of all clinics that make referrals in Appendix B. The charts give the total number of times one clinic referred patients to another, and the total number of visits that resulted from those referrals. The more pertinent results from the referral review will be discussed here.



The first concern was to determine what percentage of the visits in the "After" period that were not to Family Practice were a result of referrals from Family Practice.

The Family Practice Clinic made 166 referrals that resulted in 274 visits to other clinics. This is to say that approximately 94% of the health care required by the patients who initially go to the Family Practice Clinics is provided by the clinics. By comparison, in the "Before" period the primary clinics made 176 referrals, or 357 visits; which is to say, the five primary clinics provided 89.7% of the health care their patients required.

The last thing determined was what percent of Family Practice referral care was provided by the various primary and specialty clinics.

TABLE VI. FAMILY PRACTICE REFERRALS

CLINIC	# REFERRALS	# VISITS	% OF TOTAL VISITS
DERM	18	42	15.3
OB-GYN	18	33	12.0
ORTH	15	31	11.3
ENT	21	25	9.1
SURG	16	. 24	8.8
UROL	11	23	8.4
ОРНТ	13	16	5.8
OPTO	6	15	5.5
OTHR	8	13	4.7
OLLY	4	11	4.0
PODY	7	9	3.3
PT	5	8	2.9
ALL OTHERS	24	24	8.9
TOTALS	166	274	100.0



5. Composition of the Sample

The next three tables provide a rough idea of the composition of the patient sample when separated into Age/Sex groups and, for the sponsors, grade and status groups. Age and sex data was available on 95.6% of total sample. For Grade/Status, data was available on 95.6%.

TABLE VII. DEPENDENT AGE/SEX SUBGROUPS

AGE	MA	MALE		FEMALE		
GROUP	NUMBER	PERCENT	NUMBER	PERCENT	TOTALS	
00-01	12	5.150	6	1.179	18	
02-06	63	27.039	56	11.002	119	
07-15	105	45.064	110	21.611	215	
16-24	49	21.030	73	14.342	122	
25-44	. 0	0.0	165	32.416	165	
45-64	1	0.429	93	18.271	94	
65 >	3	1.288	6	1.179	9	
TOTAL	233.	31.402	509.	68.598	742.	



TABLE VIII. MILITARY AGE/SEX SUBGROUPS

AGE	MALE		FEMALE		
GROUP .	NJMBER	PERCENT	NUMBER	PERCENT	TOTALS
00-01	0	0.0	0	0.0	0
02-06	0	0.0	0	0.0	. 0
07-15	0	0.0	0	0.0	0
16-24	6	3.468	0	0.0	6
25-44	62	35.838	0	0.0	62
45-64	96	55.491	1	****	97
65 >	9	5.202	0	0.0	9
TOTAL	173.	99.425	1.	0.575	174.

TABLE IX. MILITARY GRADE/STATUS SUBGROUPS

GRADE GROUP	ACT NUMBER	IVE PERCENT	RETIRED NUMBER PERCENT		TOTALS
E1-E4	2	3.571	2	1.709	4
E5-E9	44	78.571	81	69.231	125
W1-W2	o	0.0	1	0.855	1
W3-W4	0	0.0	0	0.0	0
01-03	7	12.500	4 ,	3.419	11
04-06	3	5.357	29	24.786	32
07-09	0	0.0	0	0.0	0
TOTAL	56.	32.370	117.	67.630	173.



IV. CONCLUSIONS AND RECOMMENDATIONS

It is felt that the objectives of the thesis have been accomplished and have provided the following conclusions. First, it has been shown that there is a significant change in the clinic utilization pattern of patients who become members of a family practice program. When the patient joins family practice, his average visits to the other clinics de-Secondly, the overall significance of this decrease crease. makes it possible for Hospital Administrators to use the given confidence intervals to change their allocation of hospital resources prior to establishing a family practice clinic similar to the North Fort Ord Family Practice Clinic. We can also conclude that the Family Practice Clinic is providing 94 percent of the care required by members who come into the clinic, and 72.5 percent of the care required by the total membership. Since this study primarily analyzed the medical requirements of the sample in terms of "how much" and "by whom," it is not feasible to try to draw conclusions from the available data as to "why" family practice works. However, determining "why" would be an excellent area for future study. It can also be seen from the analysis that family practice is not a replacement for all other clinics. There are patients with special problems that require a medical specialist's care. The study also revealed that the overall clinic usage for members of family practice increased from an average of 4.678



to 6.165 visits per year. This increase is suspect because it was measured for each patient's <u>first</u> year of acceptance into a family practice program, and consequently may be transient in nature.

This thesis has been a preliminary effort. The proxy variable for the amount of care provided by a clinic was the number of visits to that clinic. It was relatively easy to determine, and made possible the analysis of clinic utilizations, average visit rates, and referrals of patients between clinics.

However, this also provides a starting place for other detailed studies. It is recommended that similar data be collected from other military installations where family practice clinics are operating and be analyzed and compared with this study. It is also recommended that a more detailed chart review be made of records randomly selected from the Family Practice Clinic membership to determine what constitutes an "average" visit to the other clinics or to determine exactly what type of medical problems are referred by family practitioners and why. A study should be made to determine exactly why the overall average number of visits appears to increase for family practice patients. This may be a transient phenom-The Health Care Studies Unit is conducting studies on ena. patient and clinic staff satisfaction that might help explain some of the utilization changes. A study of the changes in the patients' utilization of CHAMPUS and other civilian modes of care would provide insights into the amount of care not



provided by military health care facilities. Some measure
and comparison of the quality of care provided by each of the
various health care modes available to military patients should
also be analyzed.

Once the above recommendations are accomplished, it will probably be possible to determine just how the family practice program fits into the overall Military Health Care System.



APPENDIX A: TABLES FOR AGE/SEX GROUPS

This appendix contains tables similar to those in the body of the thesis. There are comparison of and confidence intervals on the average visit rates to individual and grouped clinics for different Age/Sex groups from the sample. The tables are numbered in the following manner: Roman numerals (I, II, III, & IV) match those for full sample tables. The letter A is for female dependents, B is for male dependents, and C is for military sponsors. The numbers (1-5) indicate the age subgroup.



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TABLE I A 4. COMPARISON OF AVERAGE VISIT RATES FOR

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π ~	STAT			00000000000000000000000000000000000000	00044
IT RATES 5 TO 44	VAR	0.0001000 0.0001000 0.00000000 0.00000000	04000		00440
ERAGE VI S- AGES	VISITS	14000000000000000000000000000000000000	00-000 88 0-		010m/10
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TABLE I B 2. COMPARISON OF AVERAGE VISIT RATES FOR 7 10 15 MALE DEPENDENTS- AGES

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STAT	00000000000000000000000000000000000000
V A R	14000000000000000000000000000000000000
VISITS	01000000000000000000000000000000000000
V A K	00000000000000000000000000000000000000
VISITS	00000000000000000000000000000000000000
CLINIC NUMBÊR	1000000000000000000000000000000000000



TABLE I B 3. COMPARISON OF AVERAGE VISIT RATES FOR MALE DEPENDENTS- AGES 16 TO 24

SIGNIF	××	
TEST	00400000000000000000000000000000000000	10004 <i>n</i> 0 0000
VAR	0w000000000000000000000000000000000000	00000
VISITS	0-000000000000000000000000000000000000	000-006 7 447-
VAR	00440000000000000000000000000000000000	00000
VISITS	00000000000000000000000000000000000000	0000000
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TABLE I C 1. COMPARISON OF AVERAGE VISIT RATES TO MILITARY SPONSORS- AGES 16 TO 44

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STAT	00,40,000,000	11000000000000000000000000000000000000
VAR	M40040000	00000000000000000000000000000000000000
VISITS	#40N0000C	00000000000000000000000000000000000000
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COMPARISON OF AVERAGE VISIT RATES	MILITARY SPONSORS- AGES 45
TABLE I. C 2.	

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VAR	74.000000000000000000000000000000000000		
VISITS	04000000000000000000000000000000000000	005000	
V A R	00000000000000000000000000000000000000		2000
VISIV	00000000000000000000000000000000000000		
CLINI NUMBER	ころをよろってもらい		21 22 23 24 25 10 76 LS



TABLE II A 1. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES FOR FEMALE DEPENDENTS- AGES 5 TO 6

CLINIC	I N 1	rerv	AL	INTERVAL			
NUMBER	B 8	EFOX	E	AFTER			
123456789012345671111222222222222222222222222222222222	0.0 0.581 0.405 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0		0.093 0.0 1.200 0.876 0.093 3.529 0.047 0.047 0.047 0.047 0.00 0.0187 0.047 0.00 0.0187 0.047 0.00	0.714 2.192 0.080 0.0125 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		1.786 3.495 0.295 0.00 0.724 0.189 0.047 0.100 0.00 0.00 0.00 0.160 0.269 0.116 0.00 0.00 0.00 0.00 0.00 0.00 0.0	



TABLE II A 2. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES FOR FEMALE DEPENDENTS- AGES 7 TO 15

NUMBER	INTERVAL BEFORE			INTERVAL AFTER		
12345678901234567890123456	0.0 0.0 0.442 0.397 0.0 1.100 0.003 0.0 0.0 0.0 0.0 0.0 0.0		0.0 0.0 0.331 0.840 0.027 1.791 0.2167 0.671 0.144 0.027 0.027 0.044 0.027 0.044 0.0290 0.166 0.093 0.093 0.093 0.093 0.093	0.513 1.058 0.08 0.004 0.0000 0.000		1.087 1.6887 0.058 0.314 0.00 0.3022 0.3427 0.027 0.027 0.027 0.027 0.02555 0.020 0.020 0.03020 0.0459 0.020 0.03020 0



TABLE II A 3. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES FOR FEMALE DEPENDENTS- AGES 16 TO 24

CLINIC	INTERVAL			INTERVAL			
NUMBER	BEFORE			AFTER			
12345678901234567890123456	0.0 0.0 1.061 0.258 0.0 0.207 0.0 0.0 0.170 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0		0.0 0.0 2.008 0.810 0.0 0.807 0.041 0.166 0.0 0.166 0.0 0.0 0.0 0.0 0.1670 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.679 2.914 0.033 0.293 0.021 0.00 0.00 0.00 0.00 0.00 0.00 0.0		1.512 4.538 0.4056 0.7723 0.122 0.04 10.04 0.04 10.00 0.0622 0.06421 0.06421 0.06421 0.0641 0.0641 0.0641 0.0641	



TABLE II A 4. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES FOR FEMALE DEPENDENTS- AGES 25 TO 44

CLINIC	INI	ERV	AL	INTERVAL		
NUMBER	BE	FOR	Ē	AFTER		
12345678901234567890123456	C.0 0.0 2.397 0.243 0.0 1.085 0.0 0.137 0.031 0.0 0.0 0.0 0.0 1.53 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		0.0 0.0 0.18 3.48 1.5249 0.1618	1.331 4.167 70.257 0.125 0.048 0.041 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		2.291 5.418 0.475 0.196 0.196 0.05 0.05 0.05 0.06 0.03 0.0275 0.06 0.03 0.0275 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.0



TABLE II A 5. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES FOR FEMALE DEPENDENTS- AGES 45 TO 99

CLINIC	INTERVAL			INTERVAL		
NUMBER	BEFORE			AFTER		
12345678901234567890123456	0.0 0.0 2.283 0.169 0.826 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		0.2583950 0.2583950 0.2583950 0.2583950 0.208300 0.20830 0.20830 0.20830 0.20830 0.20830 0.20830 0.20830 0.208	0.28855775 288855775 0.0335 822 0 0 2550 0.000000000000000000000000000000000		1.231 6.808 0.4252 0.277 0.00 0.1455 0.1455 0.031 0.12321 0.1321 0.1321 0.166 0.166 0.166 0.166 0.1200 0.1200



TABLE II 9 1. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES FOR MALE DEPENDENTS- AGES 0 TO 6

CL IN IC	RE	ERV.	AL	INTERVAL					
NUMBER		FOR	E	AFTER					
12345678901234567890123456	0.0 0.0 0.483 0.154 0.0 1.82 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		0.0 0.0 1.102 0.417 0.0 3.399 0.591 0.0 0.039 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	1.140 2.263 0.070 0.280 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0		2.314 3.6328. 0.5233 0.0339 0.6337 0.082 0.00 0.00 0.039 0.139 0.139 0.102 0.00 0.00 0.00 0.00 0.00 0.00 0.0			



TABLE II B 2. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES FOR MALE DEPENDENTS - AGES 7 TO 15

CLINIC	INT	ERV	AL	INTERVAL					
NUMBER	BE		E	AFTER					
1234567890123456 11234567890123456	0.0 0.249 0.415 0.0 1.068 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		0.0 0.0 0.513 0.822 0.0 1.847 0.182 0.328 0.169 0.071 0.028 0.094 0.3312 0.094 0.3312 0.0057 0.028	0.287 1.446 0.025 0.015 0.012 0.012 0.023 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.761 2.237 0.128 0.471 0.028 0.057 0.197 0.09 0.24 0.02 0.02 0.03 0.1323 0.02 0.1323 0.02 0.03 0.04 0.02 0.03 0.03 0.03 0.03 0.03 0.03 0.03			



TABLE II B 3. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES FOR MALE DEPENDENTS- AGES 16 TO 24

CLINIC	INT	ERV.	AL	INTERVAL					
NUMBER	BE	FÜRI	E	AFTER					
12345678901234567890123456	0.0 0.0 0.597 0.291 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		0.0 0.061 1.321 0.893 0.0 0.0 0.0 0.061 0.122 1.032 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	0.093 0.920 0.097 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.437 1.978 0.317 0.393 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			



TABLE II 0 1. 95% CONFIDENCE INTERVAL FOR AVERAGE VISIT RATES FOR MILITARY SPONSORS-AGES 10 TO 44

CLINIC NUMBEK	INT BE	ERVA	L	INTERVAL AFTER					
12345678901234567890123456	0.0 0.749 0.023 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		95213 0.64985 0.629	0.494 2.710 0.086 0.00 0.00 0.00 0.00 0.00 0.00 0.		1.148 4.185 0.045 0.332 0.045 0.045 0.045 0.0683 0.071 0.0883 0.071 0.0883 0.191 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.0			



TABLE II C 2. 95% CONFIDENCE INTERVAL FOR AVERAGE VISIT FATES FOR MILITARY SPONSORS-AGES 45 TO 99

. CLINIC	INTERVAL	INTERVAL
NUMBER	BEFORE	AFTER
1234567890 11234567890 11234567890 123223456	0.0	0.415 - 1.509 3.843 - 5.338 0.167 - 0.538 0.045 - 0.241 0.014 - 0.233 0.014 - 0.085 0.043 - 0.0846 0.052 - 0.176 0.00 - 0.028 0.052 - 0.164 0.052 - 0.028 0.00 - 0.028 0.014 - 0.363 0.052 - 0.164 0.036 - 0.363 0.006 - 0.164 0.036 - 0.164 0.007 - 0.164 0.008 - 0.189 0.018 - 0.189



GROUPED CLINICS FOR FEMALE DEPENDENTS TABLE III A. CCMPARISON OF AVERAGE VISIT RATES TO

SIGNIF	×			×			×	×		×	×		×	×
STAT	0.0	0.158	0.0	8.800	0.684	0.0	3.546	1.958	0.0	9.482	1.398	0.0	8.237	3.536
VAR	13.866	1.047	4.379	1.004	2.994	20.248	3.164	2.351	23.373	3.770	3.598	24.306	3.556	3.415
VISITS AFTER	4.094	0.375	2.173	0.400	0.736	4.875	0.944	. 908 • 0	6.604	1.299	0.890	299-9	1.167	1.208
VAR	0.0	1.460	0	6.57.0	4.028	0.0	13.012	4.660	0.0	18.575	4.458	0.0	15.901	10.020
VISITS BEFORE	0.0	0.406	0.0	2.709	606.0	0.0	2.025	1.417	0.0	4.799	1.311	0.0	4.875	2.531
CLINIC GROUP	FAMILY PRIMARY	SPECIALTY	FAMILY	PRIMARY	SPECIALTY									
AGE GRUUP	0			2 - 15			16 - 24			25 - 44			45 - 99	



TABLE III B. COMPARISON OF AVERAGE VISIT RATES TO GROUPED CLINICS FOR MALE DEPENDENTS

SIGNIF		×			×	×		×	
TEST	0.0	4.987	0.0	0.0	7.702	2.150	0.0	4.432	0.688
VAR	15.197	2.876	0.500	6.587	1.016	1.491	3.510	0.646	1.783
VISITS	4.701	1.182	0.312	5.404	0.558	0.596	1.714	0.388	0.816
VAR	0.0	16.578	2.526	0.0	5.403	2.356	0.0	2.556	5.504
VISITS BEFORE	0.0	3.688	0.312	0.0	2.471	1.010	0.0	1.551	1.082
CLINIC GROUP	FAMILY	PRIMARY	SPECIALTY	FAMILY	PRIMARY	SPECIALTY	FAMILY	PRIMARY	SPECIALTY
AGEGROUP		9 - 0			7 - 15			16 - 24	



TABLE III C. COMPARISON OF AVERAGE VISIT RATES TO GROUPED CLINICS FOR MILITARY SPONSORS

SIGNIF		×			×	×
 -		41	14		13	26
TES	0.0	4.341	1.014	0.0	7.013	1.997
VAR	13.372	0.508	6.675	23.523	1.702	7.533
VISITS AFTER	4.388	0.299	1.164	5.552	0.619	1.610
VAR	0.0	4.817	7.279	0.0	9.175	10.131
VISITS BEFORE	0.0	1.522	1.627	0.0	2.876	2.429
CL INIC GROUP	FAMILY	PRIMARY	SPECIALTY	FAMILY	PRIMARY	SPECIALTY
AGE GROUP		16 - 44			66 - 54	



TABLE IV A. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES TO GROUPED CLINICS FOR FEMALES

				ER VA FORE			ERVA FTER		
0.		•	31133						
			FAMILY	0.0	-	0.0	3.163		5.025
0	-	6	PRIMARY	3.427	-	5.323	0.479		1.209
			SPECIALTY	0.104	-	0.708	0.119	-	0.631
			FAMILY	0.0	-	0.0	1.776	-	2.570
7	-	15	PRIMARY	2.223	-	3.195	0.210	-	0.590
			SPECIALTY	0.528	-	1.290	0.408	-	1.065
			FAMILY	0.0	-	0.0	3.817	-	5.933
16	-	24	PRIMARY	1.777	-	3.473	0.526		1.363
			SPECIALTY	0.909	-	1.924	0.445	-	1.166
			FAMILY	0.0	-	0.0	5.858	-	7.349
25	-	44	PRIMARY	4.134	-	5.463	0.999	-	1.598
			SPECIALTY	0.985	-	1.637	0.598	-	1.183
			FAMILY	0.0	-	0.0	5.665	-	7.658
45	-	99	PRIMARY	4.065	-	5.685	0.784		1.550
			SPECIALTY	1.888	-	3.174	0.833	-	1.584



TABLE IV B. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES TO GROUPED CLINICS FOR MALES

	AG E ROU		CLINIC GROUP		ERVA FORE			ERVA FTER	
			FAMILY	0.0	-	0.0	3.815	-	5.588
0	-	6	PRIMARY	2.763	-	4.614	0.796	-	1.567
			SPECIALTY	0.0	-	0.673	0.151	-	0.472
			FAMILY	0.0	-	0.0	1.903	-	2.905
7	-	15	PRIMARY	2.018	-	2.925	0.361	-	0.754
			SPECIALTY	0.710	-	1.309	0.358	-	0.834
			FAMILY	0.0	-	0.0	1.176	-	2.252
16	-	24	PRIMARY	1.083	-	2.019	0.157	-	0.618
			SPECIALTY	0.408	-	1.755	0.433	-	1.200



TABLE IV C. 95% CONFIDENCE INTERVALS FOR AVERAGE VISIT RATES TO GROUPED CLINICS FOR MILITARY SPUNSORS

	AGE	CLINIC	INTERVAL			IN	TER	VAL
GI	ROUP	GROUP	BEFORE				AFT	ER
		FAMILY	0.0	-	0.0	3.495	-	5.282
16	- 44	PRIMARY	0.986	-	2.059	0.124	-	0.473
		SPECIALTY	0.968	-	2.286	0.533	-	1.795
		FAMILY	0.0	-	0.0	4.610		6.494
45	- 99	PRIMARY	2.288	-	3.464	0.366	-	0.872
		SPECIALTY	1.810	_	3.047	1.076	-	2.143



APPENDIX B: CLINIC REFERRAL CHARTS

This appendix contains charts showing the number of patients referred from one clinic to another and the total number of visits for those referrals. The clinic with code #27 represents the non-referred visits to clinics. Totals for the referring clinics are also shown.



TO CL	INIC	1	2	3	4	5	6	7	8	9
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3	TIMES	ŏ	ŏ	0	0	ŏ	ŏ	Ŏ	0	ŏ
4	TIMES	ő	0	0	0	0	Ŏ	0	0	Ŏ
5	TIMES	0	0	.8	3	Ö	0	0	O O	0
6	VISITS TIMES	0	0	11	1	0	õ	0	0	0
7	VISITS	8	0	25	1	0	0	0	0	0
8	VISITS TIMES	0	0	5	2	0	0	0 4	0	0
9	VISITS TIMES	0	0	6	0	0	0	19 1	0	0
10	VISITS TIMES	0	0	12	0	0	0	1 2	0	0
11	VISITS TIMES	0	0	33 12	0 4	0	6	9 7	0	0
12	VISITS	0	0	26	10	0	0	8	2	0
13	VISITS	ŏ	Ŏ	3	Ö	Ŏ 1	Ŏ	3	Ŏ	Ŏ
14	VISITS	Ŏ	ŏ	8	ŏ	i	Ŏ	2	Ŏ	ŏ
15	VISITS	ŏ	Ŏ	3	Ŏ	. 0	ŏ	Ŏ	0	Ŏ
16	VISITS	ŏ	ŏ	Ŏ	Ŏ	Ŏ	Ŏ	Ŷ	Ŏ	Ŏ
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17	VISITS	0	Ŏ	1	0	Ö	Ŏ	8	Ŏ	0
18	VISITS	0	1	12 17	8 2 I	0	0	6 9	0	0
19	TIMES VISITS	0	0	0	0	0	0	0	0	0
20	TIMES VISITS	0	0	2 4	0	0	0	0	0	0
21	TIMES	0	0	2	1 3	0	0	1	0	0
22	TIMES	0	0	1	Ö	0	0	Ō	0	0
23	TIMES	ŏ	ŏ	2	Ĭ	Ŏ	Ŏ	ľ	Ŏ	Ŏ
24	TIMES	0	Ŏ	14	1	0	2	1	Ŏ	00
25	TIMES	00	000	7	0	1	1	2	000	000
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7	VISITS	0	0	0	0		0	0	0	0	0
8	VISITS TIMES	0	0	0	0		0	0	0	0	0
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25	VISITS	0	0	0	0		0	0	0	0	0
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APPENDIX C. BASELINE AND CHART REVIEW FORMS

This appendix contains the forms used in the collection of Baseline and chart review data. The first form is the questionnaire completed by each member of the Family Practice Clinic. The second form is the coding sheet used to transfer the appropriate data from the questionnaire to cards. The third form is the work sheet that was used when the chart review data was collected. The last form is the chart review data card input sheet.



FAMILY PRACTICE SERVICE

U.S. ARMY MEDICAL DEPARTMENT ACTIVITY (MEDDAC) FORT ORD
FORT ORD, CALIFORNIA 93941

YOU MAY OR MAY NOT HAVE BEEN SATISFIED WITH OUTPATIENT ARMY HEALTH CARE. THIS QUESTIONNAIRE CAN BE YOUR MEANS TO INFORM US HOW WE CAN IMPROVE YOUR MEDICAL CARE AND YOUR SATISFACTION WITH IT. YOUR COOPERATION WILL BE SINCERELY APPRECIATED.

THE INFORMATION YOU GIVE WILL BE TREATED AS "MEDICAL CONFIDENTIAL"; IT WILL NOT BE AVAILABLE TO ANYONE EXCEPT THOSE WHO ARE INTERESTED IN PROVIDING BETTER MEDICAL CARE FOR YOU AND YOUR FAMILY.

PLEASE RETURN THE COMPLETED QUESTIONNAIRE BY:
YOU MAY USE THE ENCLOSED ENVELOPE OR BRING IT PERSONALLY TO:

PLEASE RETURN THIS COMPLETED QUESTIONNAIRE BY THE DATE INDICATED ABOVE OR WE WILL ASSUME THAT YOU ARE NO LONGER INTERESTED IN PARTICIPATING IN THE FAMILY PRACTICE PROGRAM.



SPONSOR INFORMATION

			Today's	Date	
Sponsor's Name:			SSAN		
Last	First	MI			
Present Marital Status: Never M Widowed	Married Sepa		Divorc	ed	
Pay Grade (circle one): E-1 E-2	2 E-3 E-4	E-5 E-6	E-7 E-8	E-9	
WO-1 C	CWO-2 CWO	-3 CWO-4			
0-1 0-2	2 0-3 0-4	0-5 0-6	0-7 0-8	0-9	·
Branch of Service (circle one):	USA USN	USAF	USMC USCO	Other	
Sponsor's Date of Birth: Day/Month	Sex /Year	Status	: Active_	Retire	dDec
Number of Eligible Spouse Children Other	If far cities date o	nily is li s on the P of departu Departu	ving in the eninsula, w re? re Date	Ft Ord a	rea, including e estimated
Outy or Business Address			Pho	ne	
lome Address					
	MILY INFOR		,		
pouse's Name:					(including
Last	First		ities on th es No		la)?
Date of Birth(DOB): Day/M	onth/Year	•			
Children's Names (oldest to younge		CTFY LAST	NAME IF DIF	FERENT FR	OM PARENTS
names (or debt to younge					
First MI			area?Se on peninsu		ny/Month/Year
			area? Se on peninsu		ay/Month/Year
			area?Se on peninsu		ay/Month/Year
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			area?Se		ny/Month/Year
(USE REVERSE SIDE IF NECESSARY)	(includi	ing cities	on peninsu	ia) Di	ay/Month/rear



	·
OTI	ER ELIGIBLE DEPENDENTS:
Nai	Living in Ft Ord area? Sex DOBD me Relationship (Including cities on Peninsula) Day/Mo/Yr
	Living in Ft Ord area? Sex DOB
Na	
	FOLLOWING INFORMATION WILL BE USED ONLY TO DESCRIBE THE POPULATION SERVED TO GET YOUR VIEWS TO ADD IN OUR PLANNING TO BETTER SERVE YOUR HEALTH CARE NEEDS.
7/0	OTE: THE FOLLOWING INFORMATION PERTAINS TO THE SPONSOR.
1.	Sponsor's race or ethnic group: 2. Sponsor's religious preference:
	White (Caucasian) Protestant
	Black Catholic
	Mexican-American Jewish
	Puerto Rican Not Above: Please Specify
	American Indian
	Chinese American None
	Japanese American
•	Not Above; Please Specify
3,	What is the highest level of formal civilian education the sponsor has Completed?
	Eight years or less
	Some high school but did not graduate
,	High school graduate
,	Two years college or less with no degree
	Associate Degree
	More than two years college but no degree
	Bachelors Degree (other than LLB)
	LLB, JD, or equivalent

Masters Degree



4.	How long has Sponsor been at Ft Ord this tour?
	0-2 months 9-11 months 18-20 months 27-30 months
	3-5 Months 12-14 months 21-23 months More than 30 months
	6-8 months 15-17 months 24-26 months
5. 5.	How many years of total active federal military service has sponsor completed?
	Less than 6 months
٠.	At least 6 months but less than 2 years
	At least 2 years but less than 4 years
	At least 4 years but less than 8 years
	At least 8 years but less than 12 years
	At least 12 years but less than 16 years
	At least 16 years but less than 20 years
	At least 20 years
6.	Does the sponsor intend to make the military a career?
٠,	Definitely No
	Probably No
	Undecided
:	Probably Yes
	Definitely Yes
	Not Appricable (Retired, Deceased, etc.)
7.	S

IF YOU DO NOT HAVE A SPOUSE AT THE PRESENT TIME SKIP THE NEXT PAGE (Page 4)



NO	TE: THIS PAGE PERTAINS ONLY TO THE SPOUSE. IF	YOU ARE NOT MARRIED GO TO PAGE
7,		
,	Less than 20 years old	_40-44 years old
	20-24 years old	_45-49 years old
	25-29 years old	_50-54 years old
	30-34 years old	_55 years or more
	35-39 years old	
8.	Highest level of formal civilian education spo	ouse has completed:
- *	Eight years or less	
	Some high school but did not graduate	
· .	High school graduate	
	Two years of college or less with no degre	ee
	Associate Degree	
4	More than two years of college but no degr	ee
:	Bachelors Degree (other than LLB)	
	LLB, JD or equivalent	
	Masters Degree	
	Earned Doctorate (PhD, MD, etc.)	
•	Spouse's race or ethnic group: 10.	Spouse's religious preference:
	White (Caucasian)	Protestant
	Black	Catholic
	Mexican-American	Jewish
	Puerto Rican	Not Above; Please Specify
	American Indian	None
	Chinese American	- Annahambana
	Japanese American	
	Not Above; Please Specify	



ARMY MEDICAL CLINIC UTILIZATION

The state of the s	linics for out patient care during the past physical exams and immunizations):
Never during the past year	4 times More than 19 times
Once	5-9 times
Twice	10-14 times
3 times	15-19 times
Spouse's utilization of Army Clause all visits	inics for outpatient care during the past for any purpose):
Never during the past year	5-9 times
Once	10-14 times
Twice	15-19 times
3 times	More than 19 times
4 times	Not Applicable; I have no spouse
The state of the s	tal number of visits to Army Clinics for 12 months. (Include all visits for any purpose
IWICE	
Twice 3 times	
3 times	
3 times	
3 times 4 times 5-9 times	
3 times 4 times 5-9 times 10-14 times	
3 times 4 times 5-9 times	



CIVILIAN MEDICAL CLINIC UTILIZATION

14.	Sponsor's utilization of civilia during the past 12 months:	n medical facilities for outpatient care
	Never during the past year	4 times More than 19 time
•	Once	5-9 times
	Twice	10-14 times
,	3 times	15-19 times
L5.	Spouse's utilization of civilian during the past 12 months:	medical facilities for outpatient care
	Never during the past year	5-9 times
	Once	10-14 times
*	Twice	15-19 times
	3 times	More than 19 times
	4 times	Not applicable; I have no spouse
.6.	Eligible children's combined tot facilities for outpatient care d Never during the past year Once Twice 3 times	al number of visits to civilian medical uring the past 12 months:
	4 times	
	5-9 times	
	10-14 times	
	15-19 times	
	More than 19 times	
	Not applicable; I have no e	ligible children.



7.	The following items are to help us determ the Sponsor's satisfaction with outpatien Army Health Care at Silas B. Hays Army Hospital, Ft Ord (Check the one box that best describes your feelings).	/
	WHAT HAS BEEN SPONSOR'S SATISFACTION IN TERMS OF:	12403
	1. Doctor's interest in your problem	
	2. Nurse's interest in your problem	
	3. Courteous treatment by doctors	
	4. Courteous treatment by nurses	
	5. Courteous treatment by receptionist	
	6. Quality of health care	
	7. Waiting time in the General Medical Clinic (Do not write times)	
	8. Convenience of location of the General Medical Clinic	
	9. Convenience of operating hours of the General Medical Clinic	
	10. Adequacy of the General Medical Clinic's physical facilities (seating, comfort, decor) in general	
	11. Adequacy of information given to you about your medical problem by doctor	
	12. Adequacy of information given to you about your medical problem by nurse	
	13. Continuity of health care provided	
	14. Laboratory services provided by the hospital facility	
	15. Pharmacy services provided by the hospital facility	
	16. X-Ray services provided by the hospital facilitie	



		•				,				
8.	th Ar Ho	e following items are to help us determine Spouse's satisfaction with outpatient my Health Care at Silas B. Hays Army spital, Ft Ord (Check the one box that est describes your feelings).	/		Sesse Stied	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Salvis Sied Salvis Sied Sied Sied Sied Sied Sied Sied Sied	Laffied /		/
		AT HAS BEEN SPOUSE'S SATISFACTION TERMS OF:		Dissafier Costly	7. 7.8.8.				56	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	1.	Doctors interest in your problem								
	2.	Nurse's interest in your problem								
	3.	Courteous treatment by doctors								
	4.	Courteous treatment by nurses .								
	5.	Courteous treatment by receptionist								
	6.	Quality of health care								
	7.	Waiting time in the General Medical Clinic (Do not write times)								
	8.	Convenience of location of the General Medical Clinic								
	9.	Convenience of operating hours of the General Medical Clinic	~		:					
1	0.	Adequacy of the General Medical Clinic's physical facilities (seating, comfort, decor) in general								
1	1.	Adequacy of information given to you about your medical problem by doctor								
1	2.	Adequacy of information given to you about your medical problem by nurse								
1	3.	Continuity of health care provided								
1	4.	Laboratory services provided by the hospital facility			~~~					
1	5.	Pharmacy services provided by the hospital facility								
1	6.	X-Ray services provided by the hospital facility								



19.	The	following	врасе :	is fo	r you	to	make	any	further	comments	you	desire:
	·~~											
*****	-			···				-	alling and the second of the second	•		
												
• 1					AS ALLENGTON CO. AND							· · · · · · · · · · · · · · · · · · ·
		ETURN THIS		-						ATED DATE	. Y(YAM UC

THANK YOU FOR YOUR COOPERATION.



BASELINE CODING SHEET ___ Sponsor's SSAI _ Marital Status 1 Never Married 3 Divorced
2 Married 4 Widowed 5 Separated ___ Pay Grade 36 0-6 37 0-7 11 E-1 16 E-6 . 21 WO-1 31 0-1 22 CWO-2 12 E-2 17 E-7 32 0-2 13 E-3 18 E-8 23 CWO-3 33 0-3 38 0-8 14 F.-4 39 0-9 34 0-4 19 E-9 24 CWO-4 15 E-5 35 0-5 . Branch of Service 1 USA 3 USAF 5 USCG 2 USN 4 USMC 6 Other . Sponsor's Year of Birth _____ Sponsor's Sex: 1 Male 2 Female Military Status: 1 Active Duty 2 Retired 3 Deceased Number of Children Number of Other Dependents Estimated Month and Year of Departure from Ft Ord City of Residence 17 Carmel Val. 20 Watsonville 18 Pebble Bea. 21 Castroville 19 Salinas 22 Other 11 Ft Ord 14 Pacific Gr. 15 Marina 12 Monterey 19 Salinas 13 Seaside 16 Carmel Spouse's Sex: 1 Male 2 Female ____ Spouse's Year of Birth Number of Dependents in the Ft Ord Area _ Sponsor's Race 14 Puerto Rican 17 Japanese Am.
15 Am. Indian 18 None of the Am. 11 White 15 Am. Indian 12 Black 18 None of the Above 13 Mex-Am 16 Chinese Am. Sponsor's Religion al Protestant 13 Jewish 15 None ¿2 Catholic 14 Other Sponsor's Education 11 3 yrs or less 15 Associate Deg. 19 Masters Degree 12 Scme H S. 16 More than 2 yrs coll. 20 Doctorate 13 H S Graduate 17 Dachelors Degree 14 2 yrs college 13 LL3, JD Sponsor's Months at Ft Ord 11 ú-2 mos 14 9-11 mos 12 3-5 mos 15 12-14 mos 20 27-29 mos 21 more than 30 mos 17 18-20 mos 18 21-23 mos 13 6-8 mos 16 15-17 mos 19 24-26 mos

 Spor	rcer	s To	tal :	!ilitary	Service				
		nes.				>8	yrs, e	< 12 y	rs
12	> 6	mos,	< 2	yrs	16	> 12	yrs,	< 16	yrs
13	ン2	yrs,	< 4	yrs	17	> 16	yrs,	< 20	yrs
14	>4	yrs,	~ 8	yrs	18	More	than	20 yr	s
 Mili	tar	y Car	cer						

 Military Career

 11 Definitely NO
 14 Probably YES

 12 Probably NO
 15 Definitely YES

 13 Undecided
 16 Not Applicable

NF 10:5(01), 5 ALE 73



BASELINE CODING SHEET (page 2)

	Spouse's Education 11 8 yrs or less 12 Some II.S. 13 II S Graduate 14 2 yrs college	15 Associate Deg 16 More than 2 yi 17 Dachelors Deg: 18 LLB, JD	rs college	19 Masters Degree 20 Doctorate
	Spouse's Race 11 White 12 Black 13 Mex-Am	14 Puerto Rican 15 Am. Indian 16 Chinese-Am.		Japanese American None of the Above
	Spruse's Religion 11 Protestant 12 Catho'ic	13 Jewish 14 Other	15 No-	·e
		Army Clinics 1' 3 times 15 4 times 16 5-9 times	18 15-	-14 times -19 times re than 19 times
	12 Once	rmy Clinics 14 3 times 15 4 times 16 5-9 times	18 15- 19 Mor	-14 times -19 times re than 19 times : Applicable
	121gible Children's Visits	s to Army Clinics		
	Sponsor's Utilization of (Civilian Nedical 1	Facilities	
	Spouse's Utilization of C	ivilian Medical Fa	acilities	
	Eligible Children's Total	Visits to Civilia	an Medical Fa	cilities
	Code for Other Dependent 40 Nother 45 Father	50 Mother-in-Law 55 Father-in-Law		her
	Sex of Other Dependent 1 Male 2 Female			
	Other Dependents Year of 1	Birth		
	Child's Sex: 1 Male	2 Female		nild's Sex
	1st Child's Year of Birth 2nd Child's Sex		7th Chi	ild's Year of Birth
	2nd Child's Year of Birth			nild's Year of Birth
	3rd Child's Sex		8th Cl	nild's Sex
	3rd Child's Year of Birth		8th Ch	nild's Year of Birth
	4th Child's Sex		9th Cl	nild's Sex
	4th Child's Year of Birth		9th Ch	nild's Year of Birth
	5th Child's Sex		10th (Child's Sex
-	5th Child's-Year of Birth		10th (Child's Year of Birt



CHART REVIEW INPUT SHEET

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1 2 3 4 5 6 7	8 4 10 11 12 13	3 14 15 16 17 18 19
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FROM TO AMOUNT	FROM TO AMOUNT	FROM TO AMOUNT
27	27	27
33	33	39
39	39	39
45	45	45
51	51	£1
57	57	57
63	63	63
69	69	69

If the clinic visit(s) is(are) made without being referred from ancimal clinic, the FROM columns (21+22, 27+28, etc) should be coded as 99.

Card Code > 1 = year prior 2 = Transition 3 = FP year



LIST OF REFERENCES

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- 4. Dixon, W.J. and Massey, F.J., <u>Introduction to Statistical</u> Analysis, 3d ed., P. 1119, McGraw-Hill Book Company, 1969.
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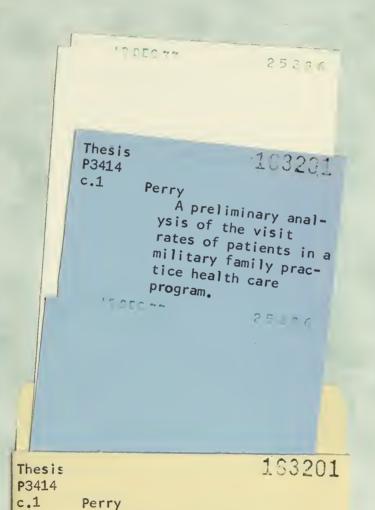
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